

APA

- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **34**
- SRM **4.9**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **19 liter(s)**
- Trub loss **5 %**
- Size with trub loss **19.9 liter(s)**
- Boil time **80 min**
- Evaporation rate **10 %/h**
- Boil size **24.8 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **14.6 liter(s)**
- Total mash volume **19.5 liter(s)**

Steps

- Temp **55 C**, Time **10 min**
- Temp **64 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **14.6 liter(s)** of strike water to **60.8C**
- Add grains
- Keep mash **10 min** at **55C**
- Keep mash **30 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **15.1 liter(s)** of **76C** water or to achieve **24.8 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	4.37 kg (89.7%)	80 %	5
Grain	Munich Malt	0.2 kg (4.1%)	80 %	18
Grain	Karmelowy Jasny 30EBC	0.2 kg (4.1%)	75 %	30
Grain	Pszeniczny	0.1 kg (2.1%)	85 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Cascade	15 g	70 min	7.1 %
Boil	azzaca	10 g	70 min	12 %
Aroma (end of boil)	Cascade	10 g	15 min	7.1 %
Aroma (end of boil)	azzaca	5 g	15 min	12 %
Whirlpool	cascad	10 g	0 min	7.1 %
Whirlpool	azzaca	10 g	0 min	12 %
Dry Hop	Cascade	10 g	4 day(s)	7.1 %
Dry Hop	azzaca	10 g	4 day(s)	12 %

Yeasts

Name	Type	Form	Amount	Laboratory
s - 04	Ale	Dry	11.5 g	---